

ES 39

ALG(  $G, w(e) \forall e \in E, (x, y) \in E$

~~$Q \leftarrow \emptyset$~~   $Q(n) = 0$   $Q(u) = \infty \forall u \in V$

~~$T \leftarrow \emptyset$~~   $Q \leftarrow V$  parent(n)  $\leftarrow$  nil

~~WHILE~~ WHILE  $Q \neq \emptyset$

ESTRAI  $u$  da  $Q$

for  $v \in \text{ADJ}[u]$

if  ~~$v \in Q$~~  if  $v \in Q$  and  $e(u, v) < Q(u)$

then parent(v)  $\leftarrow$  u

$Q \leftarrow e(u, v)$

dequeue( $Q, v, Q(v)$ )

ES 46

$E = \{(1,2), (1,3), (2,3), (3,5), (2,5), (2,4), (5,4), (5,t), (4,t)\}$

$f(1,2) = 0, f(1,3) = 0, f(2,3) = 0, f(3,5) = 0, f(2,5) = 0, f(2,4) = 0$

$f(5,4) = 0, f(5,t) = 0, f(4,t) = 0$

$G_F = \{(1,2), (1,3), (2,3), (3,5), (2,5), (2,4), (5,4), (5,t), (4,t)\}$

$e_f(1,2) = 15, e_f(1,3) = 13, e_f(2,3) = 5, e_f(3,5) = 10, e_f(2,5) = 6, e_f(2,4) = 10, e_f(5,4) = 15$

$(5,t), (4,t)$   
 $e_f(5,t) = 16, e_f(4,t) = 14$

$b = 3$  incrementa tutti  $e_f(e) = 5$

$G_F = \{(1,2) = 10, (1,3) = 7, (2,3) = 0, (3,5) = 5, (2,5) = 1, (2,4) = 5, (5,4) = 10, (5,t) = 11, (4,t) = 9\}$

$b = 1$  incrementa tutti  $e_f(e) = 6$  tranne  $(1,3) = 0$

$G_F = \{(1,2) = 9, (1,3) = 6, (3,5) = 4, (2,5) = 0, (2,4) = 4, (5,4) = 8, (5,t) = 10, (4,t) = 8\}$

$b = 4$